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ABSTRACT

This study investigated questions concerning the incidence of student off-task activities, which interrupt learning, in different academic activities, within different activity formats (e.g., individual, group), and among students differing in achievement growth (AG). AG was defined as a pattern of continuous growth during the previous two years in the Total Reading grade-equivalent score on the Stanford Achievement Tests. Fourth grade students from four classrooms in two elementary schools in an integrated urban school district served as the sample. High- and low-AG students were identified in each classroom. Thirty observations of four target students for 30 minutes each were made in four subject areas. Student behavior, type of academic activity, off-task activity and activity format were coded on a minute-by-minute basis. Twenty different academic activities and eight activity combinations were identified and then grouped into 10 categories. Six off-task activity types were found. For each student observation, activity and format interruption rates, percent of time in each off-task activity type, and total time off task were determined. Among the significant findings, the high-AG students were more likely than low-AG students to go off task during creative activities. Low-AG students were more likely to go off task during recitation. High- and low-AG students spent nearly equal amounts of time off task. In the discussion of the results, several implications for educational practice are indicated. (Author/RH)

Time Off-Task: Implications for Learning*

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Abstract

While student involved time has attracted increased research interest, relatively little attention has been paid to students' off-task behavior. This study explored the types of off-task activities in which students engaged. The types of academic activities and activity formats (individual, group) interrupted were also examined. Results include the amount of time students spent in each of the several off-task activities and the relative frequency of interruptions of different academic activity types and formats.

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Time Off-Task: Implications for Learning

Given that student involvement in academic learning activities (involved time) is a significant part of learning, interruptions to involved time decrease a student's opportunity to learn. Greater frequency of interruption (more off-task activity) results in less involved time. Assuming off-task activity to be indicative of what students might prefer to be doing, examination of the nature and frequency of interruptions would have implications for instructional designs conducive to the maintenance of involvement in learning activity, thereby enhancing student learning.

While student involved time has attracted increasing research interest, relatively little attention has been paid to students' off-task behavior. Students' achievement test performance has been shown to be significantly related to involved time (e.g., Bloom, 1974; Anderson, 1975; Fisher et al., 1978). Therefore, interruptions to involved time can be thought of as impediments to learning. Factors that might affect the frequency of interruption include the type of academic activity (e.g., reading, writing) and the activity format (individual, group). The subject area (reading, mathematics, science, social studies) and students' previous achievement growth might also be related to the frequency of interruptions.

Instructional variables such as academic activity type and format might affect the "holding power" of an activity and thus affect the frequency with which students will go off-task. Those activities in which a student can actively participate would seem less likely to be interrupted than those in which the student has a relatively passive role. The activity format seems likely to influence the frequency of interruptions, with fewer interruptions occurring in large group activities where the teacher's role as manager tends to decrease the likelihood of off-task behavior (Fisher, et al., 1978).

The subject area would seem likely to affect the frequency of off-task behavior. In many elementary schools, science and social studies are offered less often than reading and mathematics. They not only are offered on fewer days of the week but also for shorter time periods. Their infrequent occurrence might make science and social studies more appealing to students and therefore less likely to be interrupted by off-task behavior.

The achievement growth (AG) of students (based on growth patterns exhibited during the previous two years) also is likely to affect the frequency with which students interrupt academic activities. Low AG students would tend to be less motivated and more distractable than high AG students and thus would be expected to initiate more off-task behavior. However, no difference would be expected in the type of off-task activity displayed by high and low AG students.

On the basis of the above considerations the following questions are examined:

1) Are there AG or subject area differences in the type of academic activity interrupted?
2) Are there AG or subject area differences in the type of activity format interrupted?
3) Is there an AG difference in percentage of time off-task and total time spent in different off-task activities?

Method

Fourth grade students from four classrooms in two elementary schools in an integrated urban school district served as the sample. High and low achievement growth (AG) students were identified in each classroom. AG was defined as a pattern of continuous growth during the previous two years in the

Total Reading grade-equivalent score on the Stanford Achievement Tests. Students exhibiting no AG were excluded from the sample as were students for whom data were incomplete (i.e., students who had been attending school in the district for less than three years).

Students in the four classrooms were observed in four subject areas (reading, mathematics, science, social studies) over five days of the week for a total of 30 observation periods. Four target students (2 high AG and 2 low AG) were observed during each observation period. When a target student was absent, a previously identified alternate from the same AG group was observed. Of the 26 students who met the AG requirements, 21 were observed on one or more occasions. Generally the observation periods were 30 minutes but were shorter when a subject area lesson continued for less than half an hour. Data were obtained for only one low and one high AG student during six of the observation periods because of misidentification of students. Therefore, the total number of student observations was 108 (54 high AG and 54 low AG). Mean AG for the high group was 2.38 and for the low group .81. AG was not significantly related to student race or sex.

The behavior of each of the target students was coded on a minute-by-minute basis during each observation period. The type of academic or non-academic activity and the activity format were coded for each minute for each of the four students. Twenty different academic activities and eight activity combinations were identified and then grouped into 10 categories. The categories were: 1) reading, 2) writing, (e.g., worksheet), 3) creating (e.g., divergent writing 1, 4) listening and/or viewing, 5) recitation, 6) discussion, 7) projects and games, 8) quizzes, 9) conferences with the teacher and 10) other (e.g., checking work). The six non-academic (off-task)

activities (excluding transitional and management activities) that were distinguished were: 1) looking around, 2) walking around, 3) non-work related talk with other students, 4) hand raised or at the teacher's desk (wait time), 5) out of the room or maintenance (e.g, brushing teeth or going to the bathroom) and 6) other (e.g., cleaning out desk). The three activity format categories identified were individual, small group and large group. Intercoder agreement was 97% for involved time, 91% for activity type, 97% for academic activity format and 87% for type of off-task activity.

For each student observation the following scores were determined: interruption rates for each of the academic activity categories and activity formats; the percentage of time spent in each of the six off-task activity categories; the total number of minutes spent in each type of off-task activity.

Results

Academic Activity Type

Analysis of the frequency of interruptions of the different types of academic activities by AG groups indicated a significant difference for two of the ten activity categories. During creative activities the high AG students were more likely to go off task than were the low AG students. In contrast during recitation, low AG students were more likely to engage in off-task behavior. The means and F-ratios for the 10 academic activity types and the two AG groups are shown in table 1.

Insert Table 1 about here

Table 2 presents the means and F-ratios for the 11 academic activity types and the 4 subject areas. The Analysis showed significant differences for three academic activity types: writing, listening/viewing and, discussion. Writing (e.g., worksheets) was less likely to be interrupted in science than in the other three subject areas. Listening/viewing was more likely to be interrupted in social studies than in reading and mathematics. (No listening/viewing activities were found in science). Discussion in science was more likely to be interrupted than was discussion in math and social studies. (Discussion did not occur in reading.)

Insert Table 2 about here

Academic Activity Format

Analysis of the frequency of interruptions of the three academic activity formats (individual, small group, large group) showed no significant differences between high and low AG students. Also, there were no significant subject area differences in the frequency of interruption of different formats.

Off-Task Activity Type

However, as shown in table 3, analysis of time off-task in the six off-task activities revealed significant AG differences for non-work related talk to others and for "other" off-task behavior. Low AG students showed more non-work related talk to others and "other" off-task behavior (doodling, cleaning out desks, general fidgeting) than high AG students.

Insert Table 3 about here

A comparison of the total time spent in off-task activity revealed almost no difference in the total number of minutes spent in off-task behavior by the AG groups. High AG students spent 317 minutes in off-task activities while low AG students engaged in off-task behavior for 320 minutes. Both groups spent about 25% of their time off-task.

Discussion

Academic Activity Type

Analysis of the frequency of interruption of academic activity type showed low AG students interrupting creative activities less often and recitation activities more often than high AG students. Low interruption scores for low AG students in creative activities might indicate that the lower risk of being wrong appeals to these students. In contrast, in recitation activities right answers are expected. Thus, low AG students, who are less likely to know the answers, may take a more passive role, which leads to occurrences of off-task behavior.

Examination of frequency of interruption of academic activities by subject area indicated significant differences in writing, discussion, and listening/viewing. Writing (e.g., worksheet) was interrupted fewer times in science than in the other three subject areas. It may be that the types of writing activities in science differed from those in the other subject areas in ways that made them more appealing to students. Discussion showed greater frequency of off-task occurrences in science. This result may be related to the proportion of time spent in discussion in the four subject areas: there was little discussion in reading and math compared to science and social studies. It is also possible that the discussion activity in science was informal to the extent that it provided considerable opportunity for off-task behavior.

Listening/viewing showed more interruptions in social studies than in the other subject areas. When listening/viewing, students are in a passive role. Less opportunity for active participation may result in more off-task behavior. However, this result should be interpreted cautiously due to the infrequent occurrence of the listening/viewing category.

Academic Activity Format Type

Activity format type (individual, small group, large group) did not show significant differences in interruption scores by AG group or by subject area. It appears that the type of academic activity has a greater impact on student involvement than does activity format. While the teacher's role as manager in large group activities was expected to decrease interruptions, the teachers in the present study may have employed parallel management strategies across format types.

Off-task Activity

The total amount of time off-task did not differ by AG group. However, it appears that low AG students are more likely to interrupt an academic activity with off-task behavior while high AG students tend to finish the academic task and then engage in off-task behavior.

Significant differences by AG group were found in two types of off-task activities. Non-work related talk with other students was more common among low AG students than among high AG students. It appears that low AG students might be more motivated by socialization than by prescribed work. Activities in which they have opportunities for interaction with others while performing the given tasks might be more appropriate for these students.

Low AG students also displayed significantly more "other" off-task behavior. This type of off-task activity "included doodling, cleaning out desks, etc." These are areas in which a student might appear to be on-task

thus might avoid the notice of the teacher. Walking around and talking are more obvious forms of off-task behavior and might be more likely to draw the teacher's attention.

The differences in interruption scores of academic activity types found in this study imply that monitoring and providing success experiences for low AC students may encourage on-task behavior. No differences were found for academic activity format which is consistent with Good and Beckerman's (1978) findings that both large and small group settings were conducive to on-task behavior. Since high AC students appear to go off-task upon completion of their work, provision of more or different activities may maintain their on-task behavior.

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Table 1

Mean Frequency of Interruption by Academic Activity Type and AG Group

Academic Activity Type	High AG	Low AG	R-ratio
Other	.2672	.1893	.942
Reading	.3343	.1967	1.594
Writing	.2133	.1675	.800
Creating	.2025	.0000	8.452*
Listening/Viewing	.0000	.2775	1.701
Recitation	.0371	.2557	5.031*
Discussion	.0500	.0667	.055
Project/Game	.0550	.0700	.029
Quiz	.1700	.4950	2.059
Conference	.4628	.2127	2.202

*p<.05

Table 2

Mean Frequency of Interruptions by
Academic Activity Type and Subject Area

Academic Activity Type	Subject Area				F-ratio
	Reading	Math	Social Studies	Science	
Other	.2914	.0918	.4100	.2500	2.366
Reading	.3050	.0000	.1650	.4625	2.396
Writing	.1444	.2548	.2240	.0250	2.841*
Creating	.0165	--	--	--	--
Listening/Viewing	.0220	.0000	1.000	--	26.824*
Recitation	.0300	.3600	.0440	.2963	2.670
Discussion	--	.0000	.0000	.2000	22.968*
Project/Game	.1150	.0400	--	--	.866
Quiz	.0000	.3750	--	--	1.697
Conference	.1667	.3590	--	.5000	.847

*$p < .05$

Table 3

Mean Time in Off-task Activity by Activity Type and AG Group

Off-Task Activity Type	High AG	Low AG	F-ratio
Looking Around	16.6970	17.3871	.031
Walking Around	8.8571	5.5000	1.953
Non-work related talk to others	7.5926	12.0000	4.516*
Wait time	49.0000	47.5556	.175
Maintenance	46.5000	43.8000	1.396
Other	36.0000	59.6000	5.091*

*p<.05